U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL WEATHER SERVICE

SEP 30 2004

MEMORANDUM FOR: Distribution

FROM: W/OPS2 - /s/ Douglas F. Hess

SUBJECT: AWIPS Router Replacement Operational Acceptance Test Report, October 2004

The attached report describes the results for the Operational Acceptance Test (OAT) of the Advanced Weather Interactive Processing System (AWIPS) Router Replacement. The Router Replacements will replace the legacy routers with newer ones at the Warning Forecast Offices (WFO), River Forecast Offices (RFC), and regional headquarters AWIPS except in Hawaii. The remaining AWIPS sites will be installed by the AWIPS contractor, Northrop Grumman Information Technology. The Router Replacement is part of the ongoing tasks to improve AWIPS performance and security and to address AWIPS life cycle support.

There were two participating sites during a two-week period, from mid to late September 2004. They are WFO and RFC State College, PA and WFO Mount Holly, NJ. Based on the successful OAT, the Test Review Group recommends deploying the routers to all AWIPS WFOs, RFCs, and regional headquarters.

Mary Buckingham, W/OPS24, was the OAT director. Questions or comments should be directed to Mary by e-mail at Mary.Buckingham@noaa.gov, facsimile 301-713-0912, or telephone 301-713-0326 x137.

Attachment

Distribution:
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OAT Sites

WFO State College (CTP)
MIC: Bruce Budd
ESA: Les Thario
Sue Bingham

North East RFC (RAH)
HIC: Peter Ahnert

WFO Mount Holly (PHI)
MIC: Gary Szatkowski
ESA: Joe Byerly

cc:
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W/OST32 - J. Tuell
W/OST33 - J. Williams

W/OPS - J. McNulty
W/OPS1 - M. Paese
W/OPS11 - D. Bosco
W/OPS12 - A. Wissman
W/OPS13 - M. DeTommaso
w/OPS13 - M. Brown
W/OPS13 - J. Merhi
W/OPS14 - E. Parr
W/OPS21 - V. Baer
W/OPS21 - F. Lucadamo
W/OPS21 - M. Moss
W/OPS21 - W. Martin

W/OPS22 - J. Facundo
W/OPS23 - R. Thomas
W/OPS24 - J. Dinges
W/OPS24 - K. Bashford
W/OPS24 - M. Buckingham
W/NP1 - K. Cooley

W/ER1 - J. Guiney
W/ER2 - P. Gabrielsen
W/ER3 - K. Johnson
W/ER4 - T. Wilk

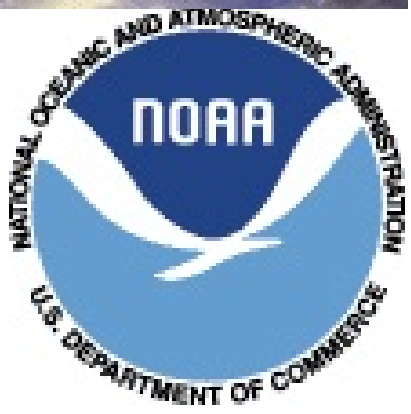
W/SR1 - J. Ladd
W/SR12x1 - P. Kirkwood
W/SR12 - B. Weiger
W/SR3 - D. Smith
W/SR4 - T. Grayson

W/CR1 - M. Looney
W/CR2 - K. King
W/CR3 - P. Browning
W/CR4 - T. Schwein

W/WR1 - R. Douglas
W/WR2 - R. Tibi
W/WR3 - A. Edman
W/WR4 - R. Diaz

W/AR1 - J. Partain
W/AR2 - R. Radlein
W/AR4 - F. Peters

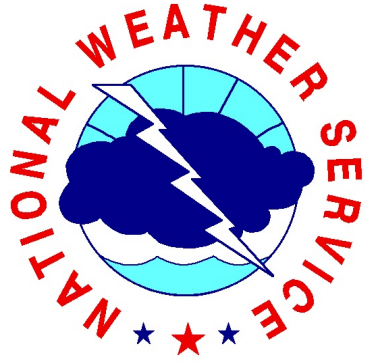
W/PRx1 - A. Samori
W/PR1 - E. Young
W/PR11 - J. Delcano
W/PR11 - B. Ward



AWIPS Router Replacement

Operational Acceptance Test (OAT) Report

October 2004



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National Oceanic and Atmospheric Administration
National Weather Service/Office of Operational Systems
Field Systems Operations Center/Test and Evaluation Branch

Operational Acceptance Test (OAT) Report for the AWIPS Router Replacement

1. Introduction

An Operational Acceptance Test (OAT) of the AWIPS Router Replacement was conducted between September 15 - 30, 2004. Refer to the *AWIPS Router Replacement Operational Acceptance Test Plan, September2004* for details on how the test was conducted.

The OAT:

a) monitored the router replacement installation process at two OAT sites, one collocated Weather Forecast Office (WFOs) and River Forecast Center (RFC) at State College, PA (CTP and RHA, respectively), and one single WFO at Mount Holly, NJ (PHI);
b) evaluated and revised the installation procedures documented in the draft AWIPS System Modification Note 23 (mod note);
c) evaluated the performance and reliability of the router replacements in support of NWS operations; and
d) evaluated the Network Control Facility's (NCF's) ability to monitor the new routers.

2. Recommendations

Deploy the router replacements at all AWIPS sites with the recommended modifications to the AWIPS System Modification Note 23.

3. Purpose

The purpose for the OAT was to verify the installation process and the operational and maintenance impact, performance, and reliability of the new hardware at a representative sample of NWS offices over a two-week period. It is also intended to aid in improving the installation process to reduce the adverse impact on field operations and ensure it is adequate for deployment to all NWS AWIPS sites.

4. OAT Objectives and Results

The following are the objectives of the OAT and the results of testing:

a. **Verify the AWIPS Router Installation Instructions allow the replacement and configuration of the routers with a minimum of disruption to the site data flow and operations.**
OAT Result: This objective was met.
Discussion: No system data loss or impact was experienced at either OAT site during the

installation with the exception of PHI where a few minutes of XT loss was experienced. PHI had the old XTs connected to the high speed data switch in a non-baseline configuration (to speed up the XTs). The installer did not realize this until a forecaster complained as the installer assumed the cables in those slots were the old routers. The mod note was amended to warn sites to ensure their cables are configured correctly.

b. **Verify the new AWIPS Routers operate reliably during site operations in a two-week demonstration at two sites.**
OAT RESULT: This objective was met.
Discussion: No problems were encountered during the OAT with the new routers.

c. **Verify product and data throughput from the new AWIPS Router are as fast or faster than from the existing AWIPS Routers.**
OAT RESULT: This objective was met.
Discussion: The Product Availability and Monitoring System (PAMS) verified there was no change in the data timeliness from before the new router installation to the two weeks following the installation.

d. **Verify product and data throughput from the new AWIPS Routers are as reliable as from the existing AWIPS Routers.**
OAT RESULT: This objective was met.
Discussion: PAMS verified there has been no change in the data reliability from before the new router installation to the two weeks following the installation.

e. **Verify the AWIPS can be switched to its backup configuration and support the site's data needs.**
OAT RESULT: This objective was met.
Discussion: During the installation, both new routers were switched by the NCF to backup verifying this objective.

5. Conclusions

The router replacement systems caused no problems during the OAT ands installation. The Test Review Group recommends deploying to all NWS WFOs, RFCs and regional headquarters systems with the recommended corrections to the AWIPS System Modification Note.